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A Novel Class of Modular Transporters for Vitamins in Prokaryotes

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Table S2. Component analysis and occurrence in genomes of ECF transporters.

Name	Components	Count	Taxonomic distribution
NikMNQO	STA	60	various groups
CbiMNQO	STA	50	various groups
	(ST)A	1	<i>Methanocorpusculum</i> sp.
MtsTUV	S(AA)T	33	Firmicutes, Gamma, Archaea
YkoEDC	S(AA)T	42	Firmicutes, Actino, Archaea
	S(TAA)	2	Actino
HtsTUV	ST(AA)	29	Firmicutes, Actino, Archaea
	S+AA'T	3	Firmicutes
QrtTUVW	STAA	12	Firmicutes, Gamma, Actino
	ST(AA)	4	Actino
	S+AA'T	8	Firmicutes
CbrTUV	ST(AA)	17	Firmicutes, Actino, Archaea
	S+AA'T	12	Firmicutes
	T(AAS)	1	<i>Desulfitobacterium</i> sp.
MtaTUV	S(AA)T	3	Firmicutes, <i>Rubrobacter</i> ,
	STAA	1	<i>Thermofilum pendens</i>
BioMNY	ATS	44	various groups
	ST(AA)	1	<i>Desulfitobacterium</i> sp.
	SAAT	9	Archaea
EcfAA'T	AA'T	80	Firmicutes, <i>Rubrobacter</i> , Archaea
	T+A+A'	7	Thermotogales
	(AA')T	6	Archaea (<i>Methonosarcina</i>)
	TA	4	Archaea (<i>Pyrococcus</i>)
BioY	S+AA'T	71	Firmicutes, <i>Rubrobacter</i>
	S+T+A+A'	6	Thermotogales
	S+TA	4	Archaea (<i>Pyrococcus</i>)
	S+T	18	Cyanobacteria
	S	43	various groups
RibU	S+AA'T	57	Firmicutes
	S+T+A+A'	6	Thermotogales
	S(TAA)	2	<i>Bifidobacterium</i>
	ST(AA)	1	Archaea
PanT	S+AA'T	38	Firmicutes
	S+T+A+A'	1	Thermotogales (<i>Petrotoga</i>)
	STAA	2	<i>Oenococcus</i> , <i>Rubrobacter</i>
ThiT	S+AA'T	34	Firmicutes
FolT	S+AA'T	55	Firmicutes
	S+T+A+A'	1	Thermotogales (<i>Petrotoga</i>)
TrpP	S+AA'T	14	Firmicutes
	ST(AA)	6	Methanomicrobia (Archaea)
	(SAA)T	1	<i>Methanocorpusculum</i> sp.
	STAA	2	Firmicutes
QueT	S+AA'T	47	Firmicutes, <i>Rubrobacter</i> , Archaea
	S+T+A+A'	1	Thermotogales (<i>Petrotoga</i>)
	STA	1	Archaea
HmpT	S+AA'T	31	Firmicutes, Archaea
	S+T+A+A'	3	Thermotogales
	S+TA	4	Archaea (<i>Pyrococcus</i>)
	ST(AA)	3	<i>Bifidobacterium</i> , Archaea
ThiW	S+AA'T	21	Firmicutes, Archaea
	ST(AA)	6	Archaea, <i>Roseiflexus</i>
	(SAA)T	1	<i>Chloroflexus aurantiacus</i>

PdxT	S+AA'T	11	Firmicutes
NiaX	S+AA'T	18	Firmicutes
CblT	S+AA'T	11	Firmicutes
	ST(AA)	1	<i>Desulfitobacterium</i> sp.
LipT	S+AA'T	3	Firmicutes (phytoplasma)
Other cassettes	S¹T(AA)	4	Archaea (<i>Sulfolobus</i>)
	S²T(AA)	1	Archaea (<i>Meth.thermoautot.</i>)
	S³T(AA)	1	Cyanobacteria (<i>G.violaceus</i>)
	S⁴T(AA)	1	Archaea (<i>Korarchaeum</i>)
	S⁵T(AA)	1	Archaea (<i>Thermofilum</i>)
	(S⁶AA)T	8	Actinobacteria (<i>Mycobacteria</i>)

Abbreviations:

S = Substrate-specific inner membrane transporter component

T = transmembrane component of energy-coupling module of dedicated transporter

A = ATPase component of energy-coupling module of dedicated transporter

STA string = S, T, A are encoded by genes that form a single chromosomal cluster (a cassette)

(AT) = a fusion of domains A and T

(AA) = a duplicated A domain

AA'T = an energizing module which is shared by multiple S components

S+AA'T = S-component gene in a genome with a shared AT-module cassette

Background colors:

Group I transporters: S components encoded in the cluster with dedicated AT-module

Group II transporters: single S components that are NOT accompanied by the dedicated AT-module

Group II transporters: energy-coupling module shared between various S components